



UNITED STATES PATENT AND TRADEMARK OFFICE

11.9
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,763	03/08/2004	Jaroslav Hyncek	FOV-155	4371
28661 7590 01/03/2008 SIERRA PATENT GROUP, LTD. 1663 Hwy 395, Suite 201 Minden, NV 89423			EXAMINER SEFER, AHMED N	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 01/03/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,763

Applicant(s)

HYNECEK ET AL.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the appeal brief filed on 8/30/2007, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Merrill USPN 6,930,336 ("Merrill '336").

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Merrill '336 discloses in fig. 7 a light-sensing pixel comprising a p type doped region (the paragraph bridging cols. 3 and 4 and col. 7, lines 10-31) and, in a CMOS image sensor (cols. 3 and 7, lines 15-38 and 1-3 respectively), comprising: a first doped charge collecting region 46 buried within the p type doped region; a first n+ type doped plug 64 (col. 6, lines 55-60) extending from near the surface of the image sensor to the first charge collecting region 46; a second doped charge collecting region 50 buried within the p type doped region, the second charge collecting region 50 vertically separated from the first charge collecting region 46 by the p type doped region; and a second n+ type doped plug 64 (col. 6, lines 55-60) extending from near the surface of the image sensor to the second charge collecting region 50.

The applicant's claim 1 does not distinguish over the Merrill '336 reference regardless of the functions allegedly performed by the claimed device, because only the device per se is relevant, not the recited functions of said first charge collecting region being capable of operating as a depleted potential well, and said second charge collecting region being capable of operating as a depleted potential well. Note that functional language in a device claim is directed to the device per se, no matter which of the device's functions is referred to in the claim.

Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528

(Fed. Cir. 1990) ("[A]pparatus claims cover what a device *is*, not what a device *does*" [emphasis in original]), makes it clear that it is the patentability of the device per se which must be determined in a "functional language" claim and not the patentability of the function, and that an old or obvious device alleged to perform a new function is not patentable as a device, whether claimed in "functional language" terms or not. Note that case law makes clear that in such cases applicant has the burden of showing that a prior art device that appears reasonably capable of performing the allegedly novel function is in fact incapable of doing so. See *In re King*, 231 USPQ 136 (Fed. Cir, 1986) ("It did not suffice merely to assert that Merrill '336 does not inherently achieve the claimed function, challenging the PTO to prove the contrary by experiment or otherwise. The PTO is not equipped to perform such tasks") and *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977) (claiming a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable). See MPEP § 2114.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Applicants Admitted Prior Art (AAPA).

AAPA discloses in fig. 1 a light-sensing pixel 100 comprising a p type doped region 102, in a CMOS image sensor, comprising: a first doped charge collecting region 103 buried within the p type doped region 102; a first n+ type doped plug 108 extending from near the surface of the image sensor to the first charge collecting region; a second doped charge collecting region 104 buried within the p type doped region, the second charge collecting region vertically separated from the first charge collecting region by the p type doped region 102; and a second n+

type doped plug 107 extending from near the surface of the image sensor to the second charge collecting region.

The applicant's claim 1 does not distinguish over the AAPA reference regardless of the functions allegedly performed by the claimed device, because only the device per se is relevant, not the recited functions of said first charge collecting region being capable of operating as a depleted potential well, and said second charge collecting region being capable of operating as a depleted potential well. Note that functional language in a device claim is directed to the device per se, no matter which of the device's functions is referred to in the claim. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) ("[A]pparatus claims cover what a device *is*, not what a device *does*" [emphasis in original]), makes it clear that it is the patentability of the device per se which must be determined in a "functional language" claim and not the patentability of the function, and that an old or obvious device alleged to perform a new function is not patentable as a device, whether claimed in "functional language" terms or not. Note that case law makes clear that in such cases applicant has the burden of showing that a prior art device that appears reasonably capable of performing the allegedly novel function is in fact incapable of doing so. See *In re King*, 231 USPQ 136 (Fed. Cir, 1986) ("It did not suffice merely to assert that AAPA does not inherently achieve the claimed function, challenging the PTO to prove the contrary by experiment or otherwise. The PTO is not equipped to perform such tasks") and *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977) (claiming a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable). See MPEP § 2114.

Furthermore, the Board cited *In re King* for the proposition that “[A] prima facie case of anticipation [may be] based on inherency,” and *In re Best* for the proposition that “Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.” See *Ex parte Smith*, 83 USPQ2d 1509,1514 (Bd. Pat. App. & Int. 2007). Please note that the fact one could reasonably expect the prior art to perform the recited function was enough to support a prima facie finding that the device claimed by virtue of the recital of said function was identical to (or obvious in view of, as the case may be) the prior art device. In this case it is reasonable to assume that AAPA’s device is capable of said first charge collecting region being capable of operating as a depleted potential well, and said second charge collecting region being capable of operating as a depleted potential well, because a comparison of Applicant’s specification to AAPA’s disclosure reveals that AAPA discloses a device that is apparently identical to the device Applicant describes as being capable of performing the function of said first charge collecting region being capable of operating as a depleted potential well, and said second charge collecting region being capable of operating as a depleted potential well. Because it is reasonable to assume that AAPA’s device is capable of performing the claimed function, the burden shifts to Applicants to show that it is not. See MPEP § 2114.

Allowable Subject Matter

5. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments, see pages 6 and 7, lines 20-24 and 15-20 respectively, filed 8/30/2007, with respect to the rejection(s) of claim(s) 1 under 35 USC § 102 have been fully considered.

The Examiner asserted (see first and final Office Actions mailed 9/30/05 and 4/24/06 respectively) that both Merrill '336 and AAPA disclose "a first doped charge collection region buried within the p-type doped region and configured to operate as a depleted potential well." However, although it is reasonable to assume that both Merrill '336 and AAPA's devices are capable of performing the claimed function, the Examiner concurs that the assertion is incorrect.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Merrill '336 and AAPA.

Response to Merrill declaration

The Merrill declaration states (see pages 2 and 3, lines 16-18 and 1-6 respectively):

Collecting region 46 in United States Patent No. 6,930,336 does not operate as a depleted potential well. In order for collecting region 46 to operate as a depleted potential well, the disclosure of the reference would have to be modified. The voltage on collecting region 46 would have to be increased from what is disclosed to a value that would cause the image sensor to operate in a substantially degraded fashion with unacceptable leakage. Because of this problem that would result from such operation, it is my opinion that no person of ordinary skill in the art would be motivated to modify the disclosure of United States Patent No. 6,930,336 to operate this device in that fashion.

Furthermore the declaration states (see page 3, lines 7-18):

The charge collecting region 103 buried within the p-type doped region 102 in the CMOS image sensor as disclosed in FIG. 1 of the above-identified patent application is not configured to operate as a depleted potential well as required by claim 1 of the above-identified patent application. FIG. 1 of the above-identified patent application discloses the structure of prior imaging sensors that were manufactured by Foveon, the assignee of the present invention. The image

sensor depicted in FIG. 1 of the above-identified patent application does not operate in that manner wherein collecting region 103 operates as a depleted potential well.

Looking at the first statement, one merely finds a blanket statement that the collecting region does not operate as a depleted potential unless the voltage on collecting region 46 is increased. Even accepting the argument that the voltage (a voltage application is not recited in claim 1) on collecting region 46 has to be increased, it is not clear how that further limits the device structure. There is nothing in the statement which argues the existence of a structural difference between the claimed invention and the Merrill reference.

The second statement makes similar blanket statement that the collecting region 103 is not configured to operate as a depleted region and it does not mention how the invention of claim 1 structurally differs from the APA.

Therefore, the Examiner finds the Merrill declaration of little value because it merely contains conclusory statements unsupported by objective factual evidence. See also *In re Beattie*, 974 F.2d 1309, 24 USPQ2d 1040 (Fed. Cir. 1992) (declarations of seven persons skilled in the art offering opinion evidence praising the merits of the claimed invention were found to have little value because of a lack of factual support).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236.

Application/Control Number:
10/796,763
Art Unit: 2826

Page 9

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ANS
November 27, 2007


SUE A. PURVIS
SUPERVISORY PATENT EXAMINER